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A DIGEST OF CURRENT LITERATURE

ON STREET AND HIGHWAY TRAFFIC

and

NEWS OF THE INSTITUTE OF TRAFFIC ENGINEERS

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A DIGEST OF CURRENT LITERATURE

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164. DO SOMETHING FOR THE PEDESTRIAN, Robert A. Mitchell, Traffic Engineer, Philadelphia, Pa. (American City, June 1939)

STREET LIGHTING. The obvious answer to the night accident problem is adequate street lighting on the main traffic arteries, particularly in suburban zones, so vehicle drivers can clearly see pedestrians in the roadway at night; automobile headlights do not seem adequate for this purpose.

Many persons cross the street between intersections, though statistics prove it is much more hazardous than crossing at intersections. Sometimes it is done to save time, but mainly because crossing at the intersections seems more confusing and dangerous owing to turning vehicles, more traffic, the seeming complexity and delay of traffic-signal operation and the lack of adequate markings to keep vehicles from encroaching on the crosswalk. At unsignalized intersections, the marking of crosswalks for pedestrians, stop lines for vehicles, and the building of proper islands where needed, have done much to improve the situation. Motorists should be required to yield the right-of-way to pedestrians at all times.

TRAFFIC SIGNALS. At signalized intersections, marked crosswalks and stop lines also are necessary. In addition, there should be a signal indication, preferably a lens with the word WALK to be illuminated only when it is safe to cross the street, directly in front of every pedestrian crossing the street. The time cycle of this signal should not be too long, not over 50 seconds, for a two-way intersection. In the operation of traffic signals with WALK lens, at the usual two-way intersection, the WALK lens should be illuminated at the same time the Green or "Go" lens is lighted. It should be darkened prior to the lighting of the Red the number of seconds that is required for a pedestrian to cross the roadway at a rate of about 4½ feet per second. A most efficient type of WALK lens has been designed by the Standards Committee of the Institute of Traffic Engineers and is now being manufactured by traffic signal companies.

ISLANDS. It is hazardous for pedestrians to cross streets over 50 feet wide, unless islands are provided where they can safely stop as vehicle traffic moves. On streets with street cars, suitably designed safety zones will serve such a purpose but on other streets the islands should be designed so as to

channelize and not hinder the progress of motor vehicles. It is also very important that these islands be adequately lighted at night, so they will be perfectly visible to motorists.

ENFORCEMENT. Should pedestrians be punished the same as motorists for not obeying traffic signal indications? Three arguments have been used against pedestrian control: (1) that it interferes with personal liberty; (2) that it seems foolish to arrest a person for crossing the street; (3) difficulty of enforcing regulation. From a safety standpoint, it has been shown that pedestrian fatalities and injuries are proportionately fewer in those cities where there is obedience than in those where no control is exercised.

Requiring pedestrians to obey traffic signals make them "traffic conscious" and more interested in the problem. We can also help the pedestrians by enforcing certain actions of vehicle drivers; that is, insist they yield the right-of-way to pedestrians at intersections where it is due them, and if turning vehicles seriously interfere with pedestrians, regulate them by police control, or prohibit them if necessary.

Safety education is probably the most effective means of reaching the pedestrian, particularly the older group, the poorer classes, and foreigners.

165. SAFETY LIGHTING IN CITIES. Earl J. Reeder, Chief Traffic Engineer, National Safety Council. (Illinois Municipal Review, May 1939)

The year 1938 saw a substantial reduction from the all-time peak in traffic accidents which occurred the previous year. An important fact that remains as a serious challenge to the interest and responsibility of public officials is that the traffic accident problem is particularly acute at night. It is then that nearly two-thirds of the fatalities occur in cities while less than one-third of the traffic is on the streets. One thing that makes the traffic accident problem particularly bad at night is that pedestrians are especially susceptible to accidents after dark and the pedestrian accident problem is a major part of the total for the twenty-four hours. This fact has an important part in determining the need for safety lighting in different parts of an urban area.

In recent years there has been a vast change in the conception of what constitutes good lighting, a change made necessary by the growing seriousness of the night accident problem. No longer is lighting evaluated alone in terms of the number of luminaires per mile or even the intensity of light per unit. Instead, safety lighting means the proper spacing of luminaires in relation to their height and the proper dir-

ection of the light upon the streets and its adjacent walks. The relation between the height of mountings and the spacing of lumenaires should be such as to give a continuing condition of seeing by silhouette as one drives along the street. This means that some of the light from one luminaire should strike the pavement at least as far away as the next luminaire.

Whenever a city street is to be lighted, records of accidents should be assembled for a sufficient time before the installation to make possible a convincing comparison with similar records taken afterwards. Similar "before and after" records should be made concerning the volumes of traffic speeds, numbers of pedestrians, and other information which will be valuable in showing the effect of lighting upon traffic movement and safety.

It is not sufficient to record merely the number of accidents. A complete analysis should be made of the types of accidents that have occurred before and after a change and of the specific locations where they occur. This adds to the total of information concerning the types of accidents which street lighting will prevent and helps to arm public officials for the proper decisions concerning installation.

166. PRELIMINARY RESULTS OF ROAD-USE STUDIES. Reported by Robert H. Paddock and Roe P. Rodgers, Associate Highway Engineer Economists, Bureau of Public Roads (Public Roads, May 1939)

Motor-vehicles annually travel approximately 250 billion vehicle miles over the streets and highways in the U. S. according to preliminary results obtained from road-use studies conducted as parts of the current State-wide highway planning surveys in seventeen representative States.

These studies--based on information obtained from personal interviews with thousands of motor-vehicle owners and operators representing the various geographical divisions places of residence, occupations and types and ages of vehicles--indicate that of all travel performed in 1936 by the 28 million passenger cars, trucks and buses, 56.4 percent was over the primary rural highways and local rural roads, and 30.2 percent on city streets. For the "average" motor-vehicle which traveled a total of 8,870 miles in 1936 the three major classifications of streets and highways were used for 5,000, 1,190, and 2,680 miles respectively.

There was considerable difference in the relative use of the various highway systems by vehicles registered in the several population groups. Vehicles owned in unincorporated areas and small incorporated towns used the primary highways and secondary and local roads to much greater extent than did ve-

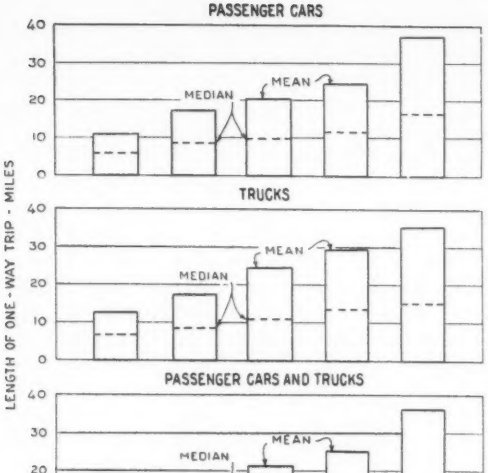

FIGURE 4.—MEAN AND MEDIAN LENGTHS OF ONE-WAY TRIPS THAT WENT OUTSIDE OF CITY LIMITS BY VEHICLES REGISTERED IN VARIOUS POPULATION GROUPS.

hicles owned in the larger cities. The rural and small town vehicles made relatively little use of city streets but vehicles in the largest cities performes a large part of their travel on streets. All vehicles except those owned in the largest cities used the primary highways more than all other systems.

The importance of the primary road to city residents is indicated by the fact that 71% of all the travel on that system originated in incorporated places. Only 4% of the travel on city streets originated in unincorporated areas. It is apparent that the provision of adequate rural highway facilities today is of major importance to the city motorist and that the required improvements in those facilities are largely occasioned by the city motorists' demands on the primary system.

Analyses of the average length of trips made outside city limits indicate that motor vehicle use consists largely of short trips for passenger cars as well as for trucks. For passenger cars over 38% of all trips traveled outside city limits were less than 5 miles in one-way length and 65% were less than 10 miles. Only 1.5percent of all trips outside cities went over 100 miles from the starting point. Truck movements showed similar characteristics. The average one-way length of trip was 14.6 miles for passenger cars, 17.4 miles for trucks and 15.2 miles for passenger cars and trucks combined.

These data indicate that much of the dense traffic often resulting in congestion on rural portions of highways near city limits is composed of a multitude of vehicles making short trips originating within the city. This tendency toward

the self-imposed limitations to motor-vehicle use resulting in the performance of a large percentage of travel within surprisingly small area around their place of ownership, coupled with the importance of the primary highways to city motorists, indicates clearly that appreciable portions of the expenditures of motor-vehicle tax revenue should be made is such a way as to alleviate the conditions of congestion and accompanying danger that exist on primary highways within short distances of population centers.

167. A PLAN TO RELIEVE TRAFFIC CONGESTION IN THE PORTAGE PARK RETAIL SHOPPING CENTER, City of Chicago, Chicago Motor Club, Chicago Surface Lines. (April 1939)

The habit of shopping by automobile and problems of street traffic congestion have grown up together in the outlying business districts of Chicago.It is often difficult,therefore, to increase automobile trade and, at the same time, improve access terminal facilities of a retail area. For this reason, businessmen of the Portage Park shopping district sought the advice of trained men in the traffic field to tell them how to rid their area of the strangling effects of street traffic congestion.

Among the interesting findings was the following: USE OF CURB PARKING. It can readily be demonstrated that a great majority of people parking at the curb of the Portage Park district stay but a short time. 55.3 per cent of those parking on a Thursday in November stayed less than 30 minutes and 76.5 per cent stayed less than one hour. Thirty-five minutes was the average time for all those who parked less than 90 minutes. These short-time parkers, then, represent essentially all customers who arrive in automobiles which are parked at the curb. Great impetus would be given to the expansion of this group if all available curb space were alloted to it. Nearly half of the used space is occupied at present by automobiles parked longer than 90 minutes. The space used by 538 long-time parkers could have accommodated 3,240 vehicles of average short-time parkers.

In order to fulfill the businessmen's desire to attract more automobile shoppers, long-time parkers should be discouraged. This might be done in any one of several different ways:

1. Limited-time parking could be established on all principal streets in the sections indicated on Ex. 2 as the extent of the parking survey, and enforced strictly. Police officers are not available for traffic duty in sufficient numbers at the present time, however, to enforce such regulations.To impose-restrictions which cannot be enforced merely tends

to break down respect of motorists for parking regulations which are of much more vital importance.

2. Proprietors and other employees would no longer park at the curb if parking meters were installed. These devices, however, would force customers to buy parking space from workers whose vehicles represent no buying power. It would seem logical that businessmen would be eager to concede all curb space to customers without being forced to show their patrons, this courtesy.

3. The signing of pledge cards, or equivalent action, is recommended as the most feasible method of urging storekeepers, professional men, and employees to put their automobiles in off-street parking lots. Contin uous effort, of course, will have to be put forth by a representative group to keep weaker members of the business community from falling back into selfish habits of using curb space for long periods. The compensation to property owners for the privilege of parking on their land is a matter to be worked out in individual cases. Off-street space in which visiting salesmen and mechanics may park should be provided as a community enterprise. Whether or not the space is used depends upon how much interest businessmen have in the convenience of their automobile-driving customers.

168. LOWER SPEED LIMIT AT NIGHT. T. J. Seburn, Traffic Engineer, Kansas City, Mo. (American City, June 1939)

On January 23, 1939, Kansas City ventured on a trial of selective legislation in which it was recognized that there is a vast difference in day and night driving conditions in any city, no matter how well the streets are lighted.

Theretofore the speed laws provided for a basic speed of 25 m.p.h. over the entire city with a provision that allowed a maximum speed of 35m.p.h. on through streets. These streets are all protected with stop signs or signals at each entering artery.

The new rule requires that the speed on through streets be reduced to 25 m.p.h. during the period from 30 minutes after sunset until 30 minutes before sunrise. This plan was adopted because the street lights are all turned on and off by astronomical time-clocks at those times, and the driver can know when to reduce his speed merely by observing whether or not the street lights are burning. Thus it is possible to take advantage of the varying hours of daylight without asking the drivers and officers to carry almanacs in order to deter-

mine when the lower speed limit applies, and leaves room for no question as to whether or not the driver should be proceeding at the lower speed.

169. TRUCK TURNOUTS OR SIDINGS ON LONG TWO-LANE GRADES TO PERMIT TRAILING CARS TO PASS. John Beakey, Traffic Engineer, Oregon State Highway Dept. (Rural Traffic Problems, Highway Research Board)

First, it appears advisable to consider the factors which might warrant the construction of turnouts and the conditions under which they would be constructed. The warrants for their construction appear to be (a)increased safety, and (b)smoother traffic flow.

There are three conditions of topography and alignment where they might be considered advisable. They are (a)a comparatively short steep grade on good alignment, but approaching a sight-limiting feature, (b) a long grade on comparatively good alignment, and (c) a long grade on inferior alignment.

It is presupposed in each instance that there is sufficient volume of traffic to warrant the cost of the extra construction. Just what traffic volume should be used as a criterion should be determined by field investigation, considering the various factors involved.

Accident records seem to indicate that not a great many accidents are directly attributable to overtaking and passing slow-moving traffic on grades. Possibly, the reasons for this are that most drivers are prudent when their own safety is concerned, and that, upon overtaking the other vehicle, they do not immediately attempt to pass but follow for at least a short distance at the lower speed and thus are better able to dodge back into line again if they start to pass and are confronted by a car in the other lane.

The second warrant for the construction of turnouts has been stated as "smoother traffic flow." This is not to be confused with uninterrupted traffic flow. It is not believed that turnouts could be provided to the extent of affording uninterrupted traffic flow, although, in the case of new construction, such a condition might be reached, approximately. In regard to roads of old design, it is believed that in many instances there would be sections of considerable length where it would not be economically sound to construct turnouts.

Of the condition of topography and alignment where turnouts might be used, the first is the comparatively short grade on good alignment. Probably the best example of this condition is an ascending grade approaching a vertical curve where it is impossible to see traffic approaching over the brow of the

hill from the opposite direction.

The second condition, the long grade on comparatively good alignment, would apply more frequently to highways of modern design. In these instances, it is believed that each turnout would necessarily be comparatively long because of the designed speed of the highway, but they would not have to be constructed as frequently as in the case of poor alignment.

The third condition of topography and alignment would be the long grade on inferior alignment. This would apply to the older highways where it is desired to increase safety and facilitate the movement of traffic. On this type of highway, the length of the turnout would depend upon finding a place where it could be terminated safely.

While the use of turnouts is usually considered in connection with ascending grades, it would seem that they also have an application on descending grades, particularly descending grades on poor alignment.

170. ACCIDENT FACTS—1939 Edition. National Safety Council.

The 1939 Edition of ACCIDENT FACTS has just been released by the National Safety Council. It contains accident statistics for the year 1938 and comparisons with earlier years. There are eight sections in this booklet of 104 pages. This issue initiates a three page index which is found on pages 102, 103, and 104, and is of great value.

The first half of ACCIDENT FACTS consists of charts and text material describing accident trends, causes, contributing causes, etc. The other half is a series of tables depicting costs, deaths and injuries by ages, accidents of cities and states, and other detailed statistics.

ACCIDENT FACTS may be obtained from the National Safety Council, 20 North Wacker Drive, Chicago, Illinois, at $.50 per copy. There are special prices for quantity orders. This booklet should prove a valuable aid to all Safety men.

NEWS ABOUT THE TRAFFIC ENGINEERING PROFESSION

ITE PINS. The Institute of Traffic Engineers has officially adopted a pin which will serve as the emblem of the organization. An enlarged sketch of the pin is shown below.The darkened part of the sketch is a bright blue hard baked french enamel; the letters ITE are in a polished gold; the letters on the edge of the pin are in raised polished gold.

This may be had in either pin with safety catch or with a ring to attach to watch chain. Both styles are priced at $1.50. Any member desiring to purchase a pin, will please send his order to the Institute of Traffic Engineers, 60 John Street, New York, N.Y. No pin will be sent unless money accompanies the order.

SPECIAL SALE OF BACK ISSUES OF ANNUAL PROCEEDINGS. The Board of Direction at a recent meeting voted to hold a sale of the 1934,1935, 1936,and 1937 issues of ANNUAL PROCEEDINGS. This sale will begin June 30 and end on Sept.30. The supply of these issues is limited. We urge, therefore, that you do not hesitate to take advantage of this money saving offer.

1 copy.	$ .80
2 copies.	1.50
3 copies.	2.00
4 copies.	2.50

This is your opportunity to replete your libraries at a saving.

RESERVATIONS FOR ROOMS AT ANNUAL CONVENTION. We wish to urge all those who intend to attend the Annual Convention in Atlantic City, October 14-17, to reserve their rooms immediately. From recent correspondence with the Manager of the Ritz-Carlton, the Institute's headquarter hotel, we learn that all single rooms at $3.00 are taken. The next price for single room is $3.50. If you have lost your reservation blank,write

in to us and we shall be glad to supply you with a duplicate.

ROBERT A. MITCHELL AND JOHN H. HUNTER, 2nd. At a recent meeting of the Metropolitan Philadelphia Chapter of the American Public Works Association, Robert A. Mitchell was re-elected President for another term and John H. Hunter, 2nd, was elected as Director.

SECOND NATIONAL INSTITUTE FOR TRAFFIC SAFETY TRAINING. The Second National Institute for Traffic Safety Training will be held at the University of Michigan, Ann Arbor, August 14 to 26. The Traffic Engineering course will be given for the two weeks and the tuition will be $20.00. Maxwell N. Halsey is the Course Director.

Each course is directed by a nationally recognized authority. The instruction is practical and down to earth. A certificate is awarded at the end of the course. Since enrollment is limited for efficiency of instruction, we suggest you begin now to make plans to attend the Institute. For further information, write to Sidney J. Williams, 20 North Wacker Drive, Chicago, Illinois.

MINNESOTA TO REGULATE ROADSIDE PARKING WITH SAFETY POSTS. In an effort to curb the ever increasing hazard of cars being parked too close to state highways, especially cars of motorists who park by roadside taverns or stands, the Safety Division of the Minnesota State Highway Department this week announced plans to lessen this danger by setting up a line of posts a reasonable distance from the highway, and prohibiting parking between the posts and the highways.

In the past, according to W. F. ROSENWALD, Traffic Engineer of the department and head of its Safety Division, motorists have been in the habit of parking just off the highway when they stop to seek refreshment. Serious accidents have resulted.

ASA HIGHWAY TRAFFIC COMMITTEE. The new Highway Traffic Standards Committee, which was set up recently to coordinate the work of the American Standards Association, elected the Institute's representative, Arnold H. Vey, as a member of the Executive Committee. Other Institute members who are serving on the Committee are: E. W. James, representing the American Ass'n of State Highway Officials and the U.S. Dept. of Agriculture, Bureau of Public Roads; Burton W. Marsh, American Automobile Association; Sidney J. Williams, National Safety Council. The Highway Traffic Standards Committee has under its jurisdiction work of committees on inspection of motor vehicles, traffic control devices, colors for traffic signals, etc.

A CONSULTANT SPEAKS. In a letter to the Editor of the American City Magazine, D. GRANT MICKLE says: "In the article 'Does My City Need a Traffic Engineer?' in the April issue of THE AMERICAN CITY, it is implied that for those cities which cannot afford or do not have trained traffic engineers the city's only recourse is to go without trained advice, or call the state traffic agency...

State traffic engineers are usually well occupied with the state's many traffic and safety problems and are seldom able to familiarize themselves thoroughly with each city's particular requirements. The solution is traffic engineering consulting service. Many cities are meeting traffic problems as they arise without giving a thought to a comprehensive plan. The result is costly congestion, delay, retarded business, injury and loss of life. For cities too small to justify a full-time traffic engineer, for larger cities in which competent trained traffic engineers are not available, the traffic engineering consultant fills a real need.Even in those cities which have recently acquired a traffic engineer, the consultant brings wide experience and often is able to lend assistance on unusual or difficult problems."

TRAFFIC SIGNALS AND THEIR LOCATION. In a letter to the Editor of the American City Magazine, T.T. WILEY says: "The article in the April issue of THE AMERICAN CITY entitled 'Police Chiefs Praise Traffic Signals', it is quite evident from the statements made that our smaller cities are very greatly in need of adequate traffic engineering service, because these statements demonstrate that the functions, advantages, and disadvantages of traffic signals are still greatly misunderstood...

It was my privilege to study the eleven signalized intersections in a community of 35,000. Signals were unnecessary, at seven of these eleven intersections and some other types of control would have been far superior both from the standpoint of traffic movement and of accident prevention...
It is about time to call a halt to the practice of over-emphasizing an infinitesimal sample of accident experience."

BENSON J. WOOD. Benson J. Wood, formerly Director of the Ann Arbor Traffic Survey, has accepted aposition as Engineer with the Evans Products Co., Auto-Stop Division, in Detroit, Mich.

POLYTECHNIC INSTITUTE OF BROOKLYN. The Polytechnic Institute of Brooklyn is offering a graduate course in Traffic Engineering. This course is composed of lectures and problems dealing with the control and regulation of highway traffic; traffic surveys and studies;accident statistics and analysis;

application of traffic control devices; time-distance graphs; signal systems;design and construction of physical facilities; for controlling traffic movements on streets and rural highways. Consideration is also given to administrative and legal matters pertaining to traffic regulation; law of negligence as applied to traffic accidents; insurance laws; organization and functions of traffic engineering departments and motor vehicle departments; methods of examining drivers; treatment of offenders; and traffic educational campaigns.

Two hours of lecture a week during the first half-year. The class will meet for fifteen two-hour sessions on Tuesdays from 6:00 to 8:00 P. M., beginning on September 26, 1939 and ending on January 23, 1940.Associate Professor LLOYD F. RADER will conduct the course. The fee is $25.00.

HARRY E. STEDMAN was re-elected city traffic engineer at a meeting of the board of directors of the Des Moines Safety Council June 2. The meeting adopted by-laws and effected a permanent organization to unite into one body 63 civic, fraternal, religious and commercial organizations for the purpose of reducing traffic accidents in Des Moines.

CESARE SOLARI. It is with deep regret that we report the death of the Commander in Chief of Police in Milan, Italy, Dr. Commendator Cesare Solari. Dr. Solari was an honorary member of the Institute of Traffic Engineers. He had long been interested in the traffic engineering profession and was the only individual outside the United States to ever receive honorary membership.

INSTITUTE OF TRAFFIC ENGINEERS

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THE OBJECTIVES OF THE INSTITUTE

The objects of the Institute shall be the advancement of the art and science of traffic engineering, the fostering of traffic engineering education, the stimulation of original research in traffic engineering, the professional improvement of its members, the encouragement of intercourse between men with mutual interests in traffic engineering, and the establishment of a central point of reference and union for its members. (Article I, Section 4 of the Constitution of the INSTITUTE OF TRAFFIC ENGINEERING).

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